116953

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Office of Superfund
SE Pennsylvania Remedial Section

Direct Dial (215) 597-8257
Mail Code 3HW21

Re: 3d [redacted] (Correspondence

March 25, 1993

FEDERAL EXPRESS
Mr. Mark Travers, Designated Project Coordinator
de maximus, inc.
2045 Lincoln Highway
Number 308
St. Charles, IL 60174

SUBJECT: Novak Sanitary Landfill

Dear Mr. Travers,

Enclosed (Attachments A - E) are three (3) copies of our response to your letter dated February 12, 1993. Please call if you have any questions.

Sincerely,

Cesar Lee (3HW21)
Remedial Project Manager

Attachments

cc: P. Anderson (3HW21)
J. Newbaker (3HW13)
E. Lukens (3RC21)
J. Banks (3HW11)
C.K. Lee (3HW51)
M. Heffron, Dynamac
M. Mustard, PADER
S. Huling, EPA/Ada
E. Freed, EPA/HQ (5202G)

CL:cl/0325932.NOV

[redacted]

February 23, 1993

MEMORANDUM

SUBJECT: Novak Landfill Superfund Site ([redacted])

FROM: [redacted]

TO: Cesar Lee, Remedial Project Manager
EPA-Region 3

The documents entitled, "Feasibility Study Novak Sanitary Landfill South Whitehall Township Pennsylvania (July 8, 1992)", and "Remedial Investigation Report, Novak Sanitary Landfill (NSL) South Whitehall Township Pennsylvania, Volumes 1-4, (July 8, 1992)" have been reviewed as per the technical assistance request memorandum sent to [redacted], dated 1/23/93.

The comments and recommendations have been organized to address the specific issue that was identified in your technical assistance request letter; "Does the RI/FS support an ARAR waiver?" This technical review represents the combined efforts of myself, and [redacted]. Presently, ROD-Stage Technical Impracticability (TI) Waiver guidance is being developed in EPA. [redacted] is chairing the committee on development of this guidance, and he has also provided valuable input in the comments and recommendations presented in this technical review.

The format of the information contained in the RI/FS was not focused on the TI issue. Therefore, locating the information on which to evaluate the TI criteria involved the iterative and simultaneous review of different sections of the documents. It is entirely possible that some of the technical review comments and recommendations have been addressed, and this information is presented in the RI/FS. In brief, there are three conclusions: (1) the impact of the landfill leachate on the ground water is not adequately defined; (2) the impact of the landfill on residential well users may be underestimated; (3) the criteria for establishing TI of achieving ARARs have not been adequately addressed, nor a convincing argument made in justification of a TI waiver.

If you have any questions concerning the technical review or if you wish to discuss other aspects of this project, please feel free to contact me ([redacted]) or [redacted] ([redacted]) at your convenience.

Technical Review Comments and Recommendations:

In order to evaluate whether the RI/FS supports an ARAR waiver based on the technical impracticability of a pump and treat system at the NSL, the ground water clean-up standards, i.e. ARARs' that have been identified and the ARARs' that are requested should be identified. The design of a ground water pump and treat system is based on the remedial objectives (i.e. clean-up standards). In the documents submitted, neither are clearly identified. Based on discussions with you, the state of Pennsylvania has specified that current ground water standards are to achieve background concentrations (non-detectable for organic compounds). However, the requested (alternative) clean-up standards (ARARs') have not been identified. Correspondingly, an alternative strategy to achieve alternative clean-up standards has not been presented. This is essential to evaluate whether a TI waiver is warranted. The RI/FS does not adequately address the issue of TI with respect to pump and treat at the NSL. A significant amount of information is presented in the RI/FS. But a logical progression of steps or information/data of why pump and treat will not effectively achieve clean-up standards has not been presented.

~~Clearly the~~ presence of a landfill on the fractured bedrock ~~system presents serious technical challenges in ground water remediation. The RI/FS does not:~~ (1) clearly address the impact of ~~the landfill leachate~~ on the ground water; or (2) clearly address ~~whether pump and treat~~ could contain, capture, or completely remove ~~the plume. These are important~~ observations and issues that should be ~~clearly identified~~ and presented logically. Comments and ~~recommendations addressing~~ this issue and other general ground water issues are presented below.

1. Page 1-26 of the FS indicates that the data collected from the leachate during the 1990 RI were not sufficient to support the development of site-wide remedial alternatives. Leachate samples were collected and analyzed from two locations; the surface seep near trench 5, and the standing liquid in the landfill gas vent pipes. The leachate quality data were compared to data collected in the EPA Subtitle D study for landfill leachate (unavailable in the EPA-RSKERL library). It was concluded that the NSL leachate was considered very mild leachate relative to typical sanitary landfills.

It is reasonable to assume that the leachate samples collected are not representative of the strength of the leachate in the NSL. The sample collected at the seep does not necessarily represent leachate that has leached through a representative cross-section of the landfill material. The same observation can be made with respect to the sample collected in the gas vent pipes. It is reasonable to expect that the leachate quality at the bottom of the landfill is more concentrated in organic and inorganic constituents present in the landfill. This leachate would represent the quality of the leachate that infiltrates into the ground water.

The plan view area of the combined landfill (unlined) at NSL is 34 acres. Assuming 20" annual rainfall, 50% runoff, and evapotranpiration, a significant quantity of leachate would be produced threatening the ground water. A leachate budget should be presented in which the various compartments of a conceptual model are identified and quantified. Correspondingly, development of site-wide remedial alternatives for landfill leachate appears appropriate. These alternatives should consider (a) minimizing the amount of water infiltrating into the landfill (impermeable cap, surface drainage) and, (b) permanently minimizing the hydraulic head (leachate removal) in the landfill.

2. The ground water mound which occurs below the landfill is one indication of hydraulic communication between the landfill (leachate) and the ground water. Based on the observation presented above with respect to leachate quality, this represents a continuing source of ground water contamination. Ground-water plume delineation and pump and treat in the direct vicinity of the ground water mound should be the focus of future investigations. The basis of this recommendation is to focus on the source of contamination. This may help identify a limited scope approach for ground water remediation efforts.

An additional consideration concerning the ground-water mound is the uncertainty associated with ground-water flow direction. Figure 4-15 indicates that the ground-water flow in the shallow bedrock would be radially outward from this area, in all directions. Figure 4-16 indicates that ground water flow in the lower bedrock is primarily to the North. The basis of this mound appears to be from only one well, yet its influence dominates the estimated flow direction across a large area of the site. Further evaluation of the hydrogeology is necessary to evaluate contaminant transport.

3. Determination of the impact of the NSL on the ground water is necessary to evaluate the technical impractability (TI) of a pump and treat system in the fractured bedrock system. Identification of the horizontal and vertical extent of the plume, and evaluation of the overall ground-water monitoring, sampling, and analysis activities is necessary.

Table 2.1 and 3-6 in Volume 1/4 of the RI indicates that the "open hole" interval for monitoring wells are as follows:

MW-1C	20'		
MW-2A	142'		
*MW-3			
*MW-4			
MW-5	225'		
MW-6	67'	MW-15	10'
MW-7	40'	*MW-16	50'
MW-8	38'	*MW-17	50'
MW-9	40'	*MW-18	51'
MW-10	50'	*MW-19	51'

MW-11	51′	*MW-20	49′
*MW-12	50′	*MW-21	50′
*MW-13	50′	*MW-22	48′
*MW-14	46′	*MW-23	13′

* off-site monitoring wells

Table 4-1 of the RI indicates that fractured intervals were encountered during drilling of the following wells: MW-7, 8, 10-14, 16-23 and that a large cavity was present in MW-15. There are two observations that can be made from this information. First, it is apparent from the construction details and the boring log information that ground-water samples represent ground water over a large vertical distance. Secondly, fractures and joints in the bedrock clearly indicate the strong liklihood that preferential pathways exist in the subsurface.

Sampling of the monitoring wells involved evacuation of at least three well volumes prior to sample collection, and samples were not collected from the "stagnant well water" prior to well evacuation. Based on 40-50′ of standing water in each well (6" ID), this would involve the evacuation of approximately 175-220 gallons of well water. Assuming contaminant migration occurred in preferential pathways (i.e. present in one stratigraphic cross-section or fracture/joint), water coming from other non-contaminated sections will dilute the ground water in the well casing. Current ground water quality data, therefore, may represent an "average" (diluted) concentration in the well.

Based on the monitoring well construction, ground water sample collection protocol, and the highly heterogeneous nature (fractured, karst, preferential pathways, etc.) of the subsurface material, it is not too surprising that ground water samples did not indicate higher levels of contamination. Data presented in Tables 5-12 thru 5-15, indicate that volatile organic compounds have been detected in ground water monitoring wells 1C, 6-9, 13, 15, 16, 19, 20, and 22. Monitoring wells 13, 16, 19, 20, and 22 are not located within the property boundary.

Ground water sampling at low flow rates, from discrete intervals in monitoring wells prior to well evacuation would improve the resolution of ground water contaminant data. Similar results using packers would help delineate the contaminant plume, identify preferential pathways, and minimize purge volume. Assuming additional sampling of wells at discrete intervals were to be performed, samples collected at or near the fractured intervals would provide the best information to develop a 3-dimensional contamination plume. These fractured intervals have been identified in Table 4-1 of the RI. Additionally, discrete interval samples collected at or near the water table may identify the relative magnitude of the contamination resulting from landfill leachate just reaching the saturated zone.

4. Well development procedures which resulted in ground water drawdown has been used to evaluate aquifer characteristics instead

of properly performed aquifer tests. These drawdown data have been used to estimate the aquifer characteristics (transmissivity, specific capacity, storativity, ground water flow rate, velocity). Drawdown data were used from the pumped well and not from observation wells. The data collected were only applicable to four wells (MW-10, 11, 12, 23) because the pumped volume removed from these wells were greater than the casing storage. Correspondingly, this information is of limited use.

In section 4.5.3 of the RI, it was concluded that ground water movement is essentially through an assemblage of interconnected fractures and joints, and the flow direction is controlled by the distribution of hydraulic head. While this most likely is an accurate assessment of the site, it is not entirely certain what role Darcian flow has in the subsurface.

In order to evaluate the potential for pump and treat, it is necessary to estimate the radius of influence or estimate the capture zone (fracture connectivity) in a pumping scenario. This type of information will help evaluate how the aquifer will respond to various pumping system designs.

5. The method of residential well sampling involved evacuation of three well volumes prior to sampling the well (pg. 3-20, RI). Based on the discussion in comment No. 3 above, it is reasonable to expect that the sample collected represents an "averaged concentration value". Note that it is unlikely that residential well usage does not follow such practice; therefore, the data may not be representative of ground water quality.

Ground water quality data included in Tables 5-19 and 5-20, of the RI indicate the presence of volatile organic compounds in numerous residential wells, but the "quantitated value is less than the quantitation limit or the reported value may not be accurate or precise due to non-conformance with a criterion for quality control."

Ground water quality data reported for the various wells in the NSL area were reported with numerous quality assurance and quality control disclaimers. Specifically, numerous trip blanks indicated trace levels of contamination. This indicates there is possibly problems with sample collection, handling and/or analysis. The specific problem is not readily identifiable.

6. Sorption processes which normally retard transport of organic compounds are directly correlated with organic carbon. Fractured bedrock will contain a very low fraction of organic carbon; therefore, little retardation due to this process is expected. If ground water monitoring data identify organic contaminants within specific fractures, placement of extraction pumps close to these fractures may significantly improve the potential effectiveness of pump and treat.

In summary, there are several main points to consider with

respect to TI evaluation based on the RI/FS information. These are as follows:

(1) Fractured flow systems are complex, and understanding contaminant transport in these systems provides an additional level of complexity. In an effort to delineate the ground water contamination plume in these systems, additional work and the careful planning and execution of field work is necessary to generate useful data. The impact of the landfill on the ground water is currently unclear. Additional work is necessary to more clearly define the areal and vertical extent of the plume and the magnitude of its concentration. This information is also necessary to evaluate the potential effectiveness of pump and treat.

(2) The size and the precarious nature of the NSL with respect to the proximity of numerous residential ground water wells (250 wells within a one half mile radius of the NSL) makes this TI waiver request rather sensitive. It is absolutely necessary that every step is taken to acquire definitive data which can be used to evaluate the impact of the NSL on the ground water. Presently, these data do not exist. A TI waiver, and therefore, relaxed ground water quality standards places a great deal of responsibility and public trust in the hands of EPA.

(3) EPA Publication 9234.2-03/FS (December, 1989) entitled, "Overview of ARARs" indicates that a TI waiver may be used when compliance with an ARAR is technically impractical from an engineering perspective. The waiver can be used if either of the two criteria can be met: (1) engineering feasibility, in which the current engineering methods necessary to construct and maintain an alternative that will meet the ARAR cannot reasonable be implementd; and (2) reliability, in which the potential for the alternative to continue into the future is low, either because of continued reliability of technical and institutional controls is doubtful, or because of inordinate maintenance costs.

An example is provided in this reference for a TI waiver in fractured bedrock. MCLs' were waived because their attainment was technically impracticable for several reasons, including: (1) dificulty in predicting the extent and locations of fractures; (2) the inability to locate and extract the pockets of waste; (3) excessive timeframes for clean-up; and (4) the irregular nature of the fractures that made effective placement of extraction wells difficult. At the NSL site: (1) fractures have been identified; (2) additional effort to locate the plume(s) of the contaminant area(s) is necessary; (3) timeframes have not been evaluated; and (4) fractures that have been identified, discrete interval sampling could be useful to effectively emplace an extraction system.

In light of the above information, it is not recommended that a Technical Impracticability waiver is granted with respect to the Novak Sanitary Landfill. Prior to granting such a waiver, EPA must have absolutely defendable data that such a waiver is warranted. Presently, this data is not available. This recommendation should

neither be considered an endorsement of a full scale pump and treat system, nor should it be considered a final/irreversible decision as to whether a TI waiver is warranted. Instead, this recommendation is directed at the current inadequacy of the RI/FS information to reasonably demonstrate technical impracticability.

Assuming EPA-Region 3 does not approve such a waiver, and a TI waiver is sought by the NSL potentially responsible parties (PRP), the following recommendations are offered:

1. The PRP should prepare and submit a "stand-alone" TI waiver request document which focuses information and data specifically on the criteria to evaluate such a waiver.

2. Guidance should be provided to the PRP with respect to the preparation of the waiver request document, i.e. format, information. [redacted] can provide this information.

3. The specific comments and recommendations identified in the context of this technical review are addressed.

cc: [redacted]

Comments Rec'd from [redacted] 3/23/93

de maximis, inc.
2045 Lincoln Highway
Suite 308
St. Charles, Illinois 60174
(708)879-3919
(708)879-0830 facsimile

[redacted]
Pls comment by
3/3/93
CL
RETURN TO ME

FACSIMILE COVER SHEET

DATE: *February 12, 1993*

FILE #: *3009-03*

TO: *Cesar Lee* CL

ORGANIZATION: *United States Environmental Protection Agency - Region III*

FACSIMILE #: *1-215-597-9890*

PAGES: *14 (including this cover page)*

FROM: *Mark A. Travers* MT

ORGANIZATION: *de maximis, inc.*

NOTES:

I thought the enclosed may be useful considering some of the issues we have discussed recently. If you have any questions, please call.

Mark

Attachment 1 & 2

cc: [redacted] ← Pls comment by 3/3/93

ATTACHMENT B (Page 1 of 8)

AR308255

de maximis, inc.
2045 Lincoln Highway
Suite 308
St. Charles, Illinois 60174
(708)879-3919
(708)879-0830 facsimile

February 12, 1993

VIA FACSIMILE

Mr. Cesar Lee (3HW21 CL)
United States Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Subject: Novak Sanitary Landfill Site
South Whitehall Township, Pennsylvania

Dear Mr. Lee:

As a result of our recent conversations regarding the Old Mine Area and the Construction/Demolition Area at the Novak Sanitary Landfill site, I thought it might be useful if the information pertaining to these areas be summarized in a single document. I also thought it might be useful if data related to the technical impracticality of ground water pump and treat were summarized. Therefore, with the authorization of the Novak RI/FS PRP Group ("Group"), Vincent Uhl Associates prepared the enclosed summaries of ground water conditions at the Novak Sanitary Landfill. The enclosed are two brief memoranda pertaining to the hydrogeologic and ground water quality conditions in the vicinity of the Old Mine Area and the Construction/Demolition Area, and the feasibility of ground water recovery (i.e., pump and treat).

It is apparent by the ground water conditions downgradient of the at the Old Mine Area and the Construction/Demolition Area that closure activities conducted by the Novak Sanitary Landfill, Inc. at the Old Mine Area, have been effective in mitigating the degradation of the ground water. The ground water monitoring locations proximate to these disposal areas are essentially unimpaired, with the exception of the former ground water supply well at the unoccupied Novak residence. Ground water quality conditions at the former ground water supply well at the unoccupied Novak residence are not considered the result of a release from the Old Mine Area or the Construction/Demolition Areas, but likely the result of a release from the surface fill area or the maintenance area currently utilized by Mr. Louis Novak, Jr., for his trucking business (Valley Hauling). Therefore, the remedial measures recommended for the Old Mine Area are different from remedial measures recommended for the Trench Fill and Surface Fill Areas. The remedial activity recommended for the Old Mine Area and the Construction/Demolition Areas would involve the maintenance or repair of the existing cover to promote the runoff of precipitation. Essentially, the conditions at the Old Mine Area that require remedial action are typical of any landfill cover that has not been maintained. If the existing cover is repaired and maintained consistent with current practice at closed landfills, ground water quality downgradient would not be expected to deteriorate from the current essentially unimpaired condition. The existing cover at the Old Mine Area is effective, even in its currently unmaintained condition, therefore the added investment of more than one million dollars for a single barrier cap is unwarranted. The recommended remedial measures for the Construction/Demolition Area are consistent with current requirements for construction/demolition fills.

FROM FIG. 2-2 OLD MINE AREA $\frac{20}{400} = \frac{1}{20}$ ~ 5%

de maximis, inc.

DEMOLITION FILL AREA $\frac{20}{100} = \frac{1}{5}$ ~ 20% HIGHER SLOPE

IF VEGETATIVE COVER CRACK RUNOFF SYSTEM

IF REPORT FIG 3-6 SHOWED A LOT OF STANDING WATER AREAS. IT MEANS LACK OF MAINTENANCE. AND THE INTEGRITY OF COVER IS UNKNOWN

In conclusion, the Old Mine Area is a disposal area that was previously closed, apparently in accordance with the requirements existing at that time. Since the Old Mine Area was closed, and the closure has apparently been effective, repair and maintenance of the existing cover is the most appropriate remedial measure. With respect to the Construction/Demolition Area, under the current regulations, the appropriate closure for an area accepting this type of waste is soil cover, rather than a single barrier cap. Finally, the basis for the recommended remedial measures for these two disposal areas differs, therefore, any evaluation the recommended remedial measures for these two disposal areas should be conducted independently.

INSTALL LEACHATE WELL(S)

The second enclosure, which relates to the practicality of a ground water pump and treat system, provides a summary of the hydrogeologic conditions that exist at the Novak Sanitary Landfill site and a potential ground water recovery scenario. The scenario indicates an estimate of the minimum number of recovery wells that would need to be installed to capture the impacted ground water. It should be understood that this is the minimum number of recovery wells needed to capture the impacted ground water, not restore the ground water to background conditions. If the number of recovery wells installed proved effective in capturing the impacted ground water, 10's to 100's of pore volumes of ground water would need to be removed from the fractured bedrock aquifer (assuming favorable hydrogeologic conditions) to have any impact on the ground water quality.

ACTUALLY, THIS SITE IS NOT SUITABLE FOR LANDFILL

THE PUMP & TREAT IS ONLY KEEPING LEACHATE LESS THAN 1'.

However, favorable conditions do not exist at this site. The recovery wells would be installed in a fractured bedrock, where the concentrations of constituents are low to trace, and the specific capacities of existing monitoring wells are low. The ability to form a capture zone in the fractured bedrock would be extremely limited by the irregular nature of the fractures in the bedrock. It would be difficult to predict with any accuracy the extent and locations of all fractures containing impacted ground water and accurately locate recovery wells to reach all fractures. Finally, it is not appropriate to make a significant expenditure in attempt to prove, through installation, that a ground water pump and treat system is impractical when the essentially the same level of protection could be provided to the population potentially at risk by other means (ground water monitoring and installation of point of use treatment if necessary. The point of use monitoring would be more reliable form of protection. In conclusion, the information obtained during the remedial investigation and feasibility study supports a technical impracticality waiver without further analyses. This waiver is supported by a technical impracticality waiver described in U.S. EPA publication 9234.2-03 FS entitled "Overview of ARARs -- Focus on ARAR Waivers". The publication describes a technical impracticability waiver which is essentially a description of the conditions at the Novak Sanitary Landfill site.

As a final note, the potential risk to the population through ground water may be non-existent in the near future. Several of the ground water monitoring locations, which are also ground water supply wells, are currently or will in the near future be replaced with a public water supply. Public water lines have been extended along River Road and Lime Kiln Road.

If you or your staff has any questions, please do not hesitate to contact me.

Best regards,
de maximis, inc.

Mark A. Travers
Senior Project Director

ATTACHMENT B (Page 3 of 8)

from 45 to 85 feet, bgs. The weathered bedrock is underlain by carbonate sequences (limestone and dolomite) of the Epler Formation of the Beekmantown Group. During the drilling of these two monitoring wells, groundwater was observed to enter the boreholes below depths of 145 feet, bgs.

The geologic data developed during the RI indicate a bedrock high in the vicinity of the MW-1C/MW-7 monitoring well cluster which is located about 800 feet southwest of the Old Mine Area. The depth to competent bedrock increases to the north in the direction of the Old Mine Area which corresponds to a greater thickness of unconsolidated and weathered bedrock materials. Generally, the unconsolidated materials thicken to the north of the NSL where thicknesses of over 100 feet have been reported (Wood et al., 1972).

2.2 Groundwater Flow Conditions

Water-level measurements made in monitoring and residential wells at and proximate to the Old Mine Area indicate that the top of the zone of saturation is in competent bedrock and approximately 159 feet, bgs in the vicinity of the Old Mine Area. Table 1 provides a summary of water-level data for these wells and the elevation of the top of competent bedrock.

The regional water-level contour map, developed during the RI, indicates that groundwater flow from the Old Mine Area is to the north and the area lies just south of the trough in the water table (Refer to Figure 4-13 of RI).

BOTH MW-10 & 11 ARE BEDROCK WELLS. NO OVERBURDEN WELL EXISTED THEN THE MOUNDING IS UNKNOWN. BUT THE WELL LOGS INDICATED VERY MUCH AT 35-45 BGS

The shallow water-level contour map developed for the site (Refer to Figure 4-15 of RI) shows no evidence of mounding at or in the vicinity of the Old Mine Area. In fact the water levels in the MW-10/MW-11 cluster have, over the period of the RI field measurements, been virtually similar, thus indicating horizontal flow conditions in this area.

The deeper water-level contour map developed for the site (Refer to Figure 4-17 of the RI) indicates that groundwater flow is to the north-northeast similar to shallow flow conditions.

3.0 GROUNDWATER QUALITY RESULTS

Monitoring and residential wells in and downgradient of the Old Mine Area include the MW-10/MW-11 cluster, RW-09 and RW-15. Residential wells RW-08 to the west and RW-16 to the east are side-gradient from the Old Mine Area.

RW-13, the residential well at the unoccupied residence to the west of the landfill entrance road, lies about 500 feet to the west of the Old Mine Area, and is downgradient of the maintenance area.

Table B-1. Gas Vent Data, Novak Sanitary Landfill.

Rec'd from [redacted] 2/24/93

VENT NUMBER[1,2]	HEIGHT OF VENT ABOVE GROUND	DEPTH OF VENT (FT)	DEPTH TO LIQUID (FT)	DEPTH OF LIQUID (FT)[3]	DEPTH OF LIQUID BELOW GRADE (FT)
GV-1	5.5	10.5	8.8	1.7	3.3
GV-2	6.0	10.4		•	
GV-3	5.9	10.4		•	
GV-4	6.4	10.5		•	
GV-5	5.5	10.5		•	
GV-6	5.0	10.4	6.8	3.6	1.8
GV-7	5.0	10.5	8.4	2.1	3.4
GV-8	6.0	10.4		•	
GV-9	4.9	10.4		•	
GV-10	5.4	10.4		•	
GV-11	5.7	10.3		•	
GV-12	5.8	9.4		•	
GV-13	6.8	10.6		•	
GV-14	5.2	9.1		•	
GV-15	7.5	10.8		•	
GV-16	4.9	9.2		•	
GV-17	5.0	9.2		•	
GV-18	4.6	8.5		•	
GV-19	2.7	7.1		•	
GV-20	5.0	9.0		•	
GV-21	4.6	8.6		•	
GV-22	5.0	9.0		•	
GV-23	4.7	8.3		•	
GV-24	7.1	10.6		•	
GV-25	5.9	10.5		•	
GV-26	5.5	10.3	10.2	0.10	4.7
1-E	BROKEN AT LAND SURFACE -- NOT MEASURED				
2-E	BROKEN AT LAND SURFACE -- NOT MEASURED				
6-E	9.0	19.8	17.2	2.6	8.2
7-E	14.3	19.9		•	
8-E	12.2	20.0	18.8	1.2	6.6
9-E	12.2	19.6		•	
10-E	7.7	19.7	18.5	1.2	10.8
1-W	BENT APPROXIMATELY 45 DEGREES -- NOT MEASURED				
2-W	7.3	19.3	12.2	7.1	4.9
4-W	10.0	19.8	14.7	5.1	4.7
5-W	13.3	19.6	17.8	1.8	4.5
7-W	11.2	19.9		•	
8-W	4.7	19.6	11.7	7.9	7.0
9-W	8.0	9.4		•	
10-W	5.5	19.9	17.0	2.9	11.5
A	13.3	19.5		•	
B	13.0	31.9	23.2	8.7	10.2
Q	6.3	10.4		•	
R	4.8	10.4		•	
S	4.8	10.3		•	
T	4.2	10.6	10.4	0.2	6.2
U	5.0	10.6	10.1	0.5	5.1
V	4.6	10.5	10.3	0.2	5.7
W	3.8	11.3	8.9	2.4	5.1
X	6.4	10.4		•	
Y	7.9	10.1		•	
Z	9.0	10.5		•	

EVEN ABOUT 11 FT. BGS, THERE ARE LEACHATE MOUNDING

• No standing water detected in vent.

(1) Vent number C through P, inclusive do not exist.

(2) GV-series vents are located in West Trench, Southwest Trench, and Surface Fill Areas; E-series. W-series and vents A and B are located in the Trench Fill Area; Vents Q through Z are located in the

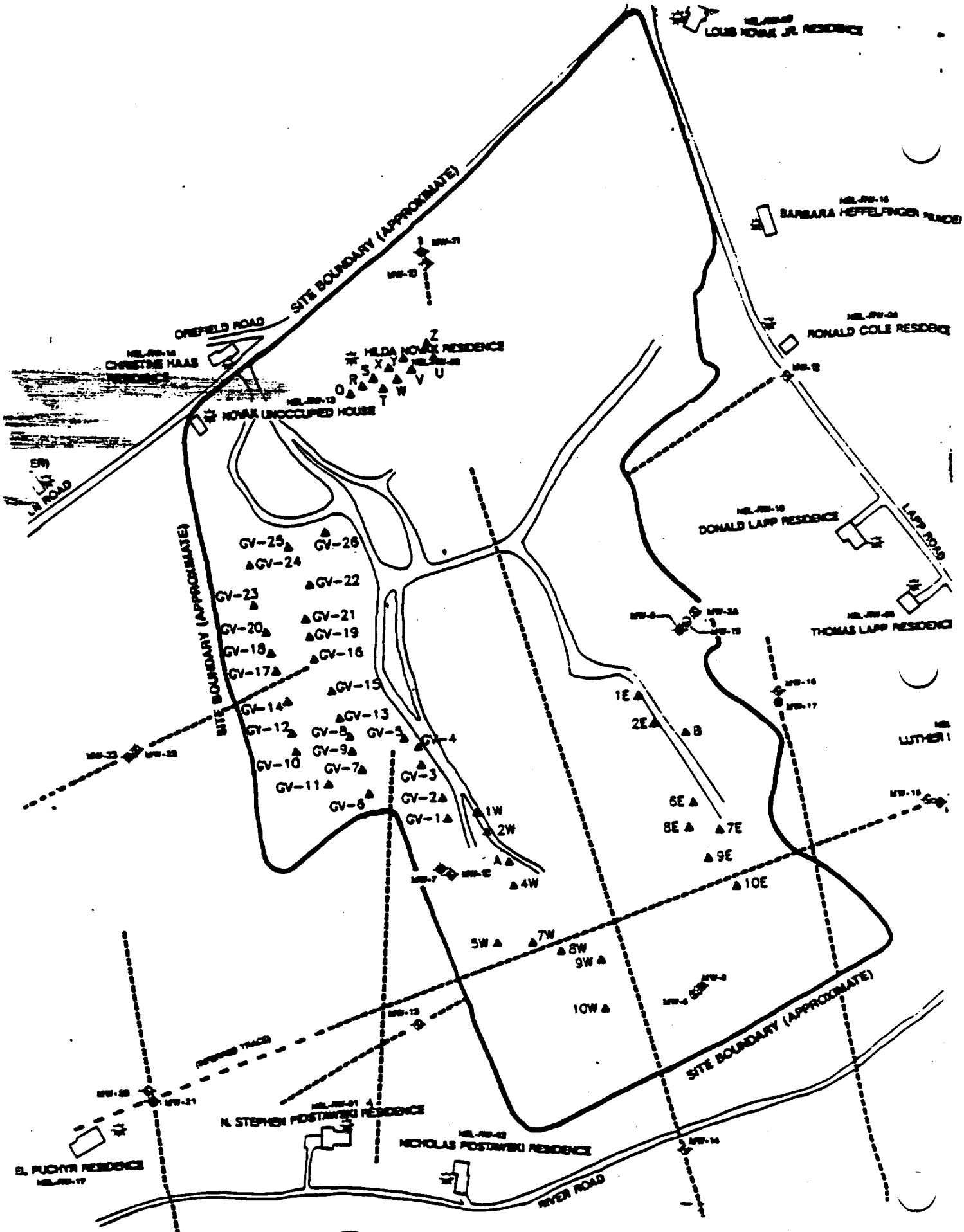
(3) Measured from bottom of vent.

ATTACHMENT B (Page 5 of 8)

TABS-LWELNOVAK-APPEN

D

AR308259



ATTACHMENT B *(Page 6 of 8)*

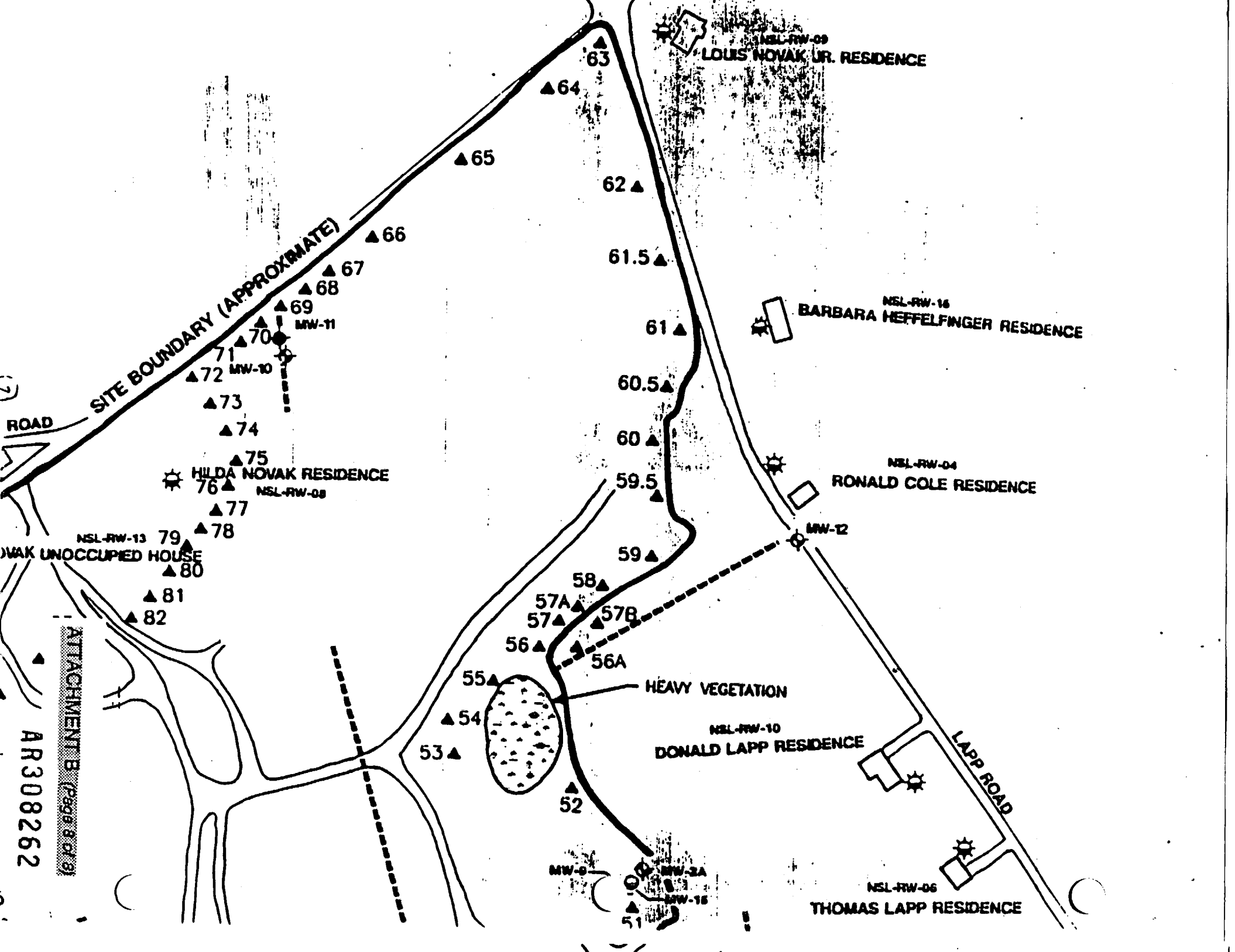
Table A–1 (continued). Soil Gas Survey Results, Novak Sanitary Landfill

DATE	PROBE LOCATION NUMBER	TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATION (PPM) INSTANTANEOUS READING	2 MIN. READING	4 MIN. READING	PERCENT OF LOWER EXPLOSIVE LIMIT FOR METHANE INSTANTANEOUS READING	1 MIN. READING
September 13, 1991	49	3.8	1.0	--	100	100
(continued)	49a	3.9	2.2	--	0	0
	49b	3.8	1.3	--	13	9
	49c	4.0	2.0	--	5	7
	50	4.0	3.3	--	0	0
	51	4.4	2.3	--	0	0
	52	3.2	2.8	--	0	0
	53	4.8 (1)	1.3	--	12	8
	54	4.8	0.9	--	75	72
	55	4.8 (1)	0.8	--	0 *	0
	56	6.4	2.0	--	100	35
	56a	--	--	--	0	0
	57	6.0	0.6	--	100	40
	57a	9.0	2.6	--	100	90
	57b	8.2	7.0	--	0	0
	58	8.9 (2)	1.2	--	90	0
	59	7.3 (2)	1.4	--	30	0
	59.5	1.2	1.0	--	0 *	3
	60	7.8	3.2	--	0 *	12
	60.5	6.0 (2)	4.2	--	15	2
	61	7.0	5.0	--	0	0
	61.5	6.4	5.4	--	0	0
	62	6.2	5.6	--	0	0
	63	5.4	3.6	--	0	0
	64	4.2	3.6	--	0	0
	65	4.2	4.0	--	0	0
	66	>20	4.6	--	0	0
	67	5.4	5.6	--	0	0
	68	5.6	5.2	--	0	0
	69	5.2	4.9	--	0	0
	70	6.2	5.3	--	0	0
	71	6.2	4.5	--	0	0
	72	5.6	5.0	--	30	30
	73	5.7	4.5	--	0	0
	74	5.4	4.8	--	3	1
	75	5.8	4.4	--	0	0
	76	4.2	3.8	--	0	0
	77	4.6	4.6	--	0	0
	78	4.9	3.9	--	0	0
	79	4.0	3.5	--	0	0
	80	4.0	3.6	--	0	0
	81	4.2	2.9	--	0	0
	82	3.9	3.6	--	2	2
September 9, 1991	83	3.2	2.2	--	0	2.5
September 13, 1991	18.5(3)	5.0	2.8	--	0	0
	17.5(3)	3.4	2.9	--	0	3

MEANS SOME VOC EXISTED

* Meter initially read 100% (first few pumps), then dropped to zero or recorded level.
Dynamac split sample
(2) Taken at approximately 30 sec. (initial reading unstable)
(3) Sample requested by USEPA.

ATTACHMENT B (Page 7 of 8)


NSL-RW-09
LOUIS NOVAK JR. RESIDENCE
63
64
65
62
66
61.5
67
68
69
MW-11
70
71
72
MW-10
61
NSL-RW-16
BARBARA HEFFELFINGER RESIDENCE
60.5
73
74
75
60
ROAD
SITE BOUNDARY (APPROXIMATE)
HILDA NOVAK RESIDENCE
76
NSL-RW-08
NSL-RW-04
RONALD COLE RESIDENCE
59.5
77
78
NSL-RW-13
79
MW-12
OVAK UNOCCUPIED HOUSE
59
80
58
81
57A
57
57B
82
56
56A
55
HEAVY VEGETATION
54
NSL-RW-10
DONALD LAPP RESIDENCE
53
LAPP ROAD
52
MW-9
MW-3A
MW-15
NSL-RW-06
THOMAS LAPP RESIDENCE
51
ATTACHMENT B (Page 8 of 8)
AR308262

[redacted]

March 5, 1993

Mr. Cesar Lee
Remedial Project Manager
U.S. EPA Region III (3HW21)
841 Chestnut Building
Philadelphia, PA 19107

Re: de maximis letter, February 12, 1993
Novak Sanitary Landfill NPL Site
South Whitehall Township
Lehigh County

Dear Cesar:

[redacted] received the February 12, 1993 de maximis letter, with attachments generated by Vincent Uhl Associates, Inc., concerning the Novak Sanitary Landfill NPL Site on February 17, 1993. The following comments result from the Department's review of the above referenced document:

de maximis letter

1. Page 1, Paragraph 2, Sentence 3. This sentence states that a release from the surface fill area or the maintenance area is the likely cause of the groundwater contamination at the unoccupied Novak residential well. There is no evidence given to support either of these areas as the cause of the contamination. This statement should be supported by facts.

2. Pages 1 and 2. The question of whether or not the existing cover over the Old Mine area is effective under current conditions is not the determining factor in whether or not a municipal cap should extend over this area. The question which is germaine is whether a single barrier cap over the entire landfill will better fulfill the nine evaluation criteria. Especially important among these criteria is protection of human health and the environment and long term effectiveness and permanance. A single barrier cap over all areas of contamination including the Old Mine area would be more protective, more effective and certainly more permanent than the existing cover.

3. Page 2. Paragraph 1. It is unclear which regulations are referred to in this paragraph.

4. Page 2, Paragraph 3. This paragraph sets forth the reasons for not installing a GW extraction system at the Novak site. The third and fourth sentences spell out the difficulty of designing a GW extraction system in a fractured bedrock aquifer. The Department acknowledges that it would entail a degree of difficulty higher than a system installed in a sand and gravel aquifer. However, difficulty by itself is not a reason to claim a technical waiver.

[redacted]

This paragraph sites the EPA publication 9234.2-03 FS, entitled "Overview of ARARs—Focus on ARAR Waivers"; is it coincidence that the reasons set forth in this paragraph mirror those stated in this publication for a technical impracticability waiver? Missing is a real time frame for the restoration of the bedrock aquifer, undortunately this was never computed.

The discussion of the installation of point of use treatment systems is irrelevant in determining whether or not an ARAR waiver is appropriate. CERCLA Section 121(d)(4) lays out the criteria for justification of an ARAR waiver. Since point of use treatment systems will not provide an equivalent standard of performance to remediation to background levels, they cannot be used to justify an ARAR waiver. Also, since this is an enforcement site, the argument regarding the cost of installation of point of use systems vs. additional study to determine technical practicability is irrelevant because fund balancing is not involved at this site.

This paragraph puts forth the idea that "point of use" monitoring would be equally as protective to potential receptors as a GW extraction system. Yet, in the draft PP, the preferred alternative calls for an annual monitoring program, which the Department finds to be lacking in protectiveness.

As previously stated, what is lacking is a comparison of time between an active aquifer restoration (GW extraction) versus a passive restoration of the aquifer (natural attenuation). Which method will achieve the desired goal faster? This information has not been provided.

Groundwater Recovery Feasibility

5. Page 1, Section 2.0: Hydrogeologic Characteristics, Paragraph 2, Last Sentence. This sentence contradicts information presented in the RI. The RI states that the mounding is due to the presence of water in the trenches, which provides a continuous recharge to the underlying aquifer.

The hydrogeologic characteristics of the bedrock aquifer as summarized from the RI should be viewed as only preliminary, as stated on Page 4-61 in the RI. The reasons for this preliminary designation of the data is based on short duration of the "pumping tests" and the low pumping rates. It should be further noted that these "pumping tests" were conducted on the monitoring wells during the development of these wells (See page 4-57).

Since this preliminary data was used to generate specific capacity and transmissivity for the bedrock aquifer, it should be viewed as questionable. Step drawdown tests (to determine appropriate pumping rates) and long duration pump tests should be conducted on select monitoring wells to obtain more complete data on the aquifer's characteristics, before making any decisions concerning the technical impracticability waiver.

6. Page 3, Section 2.0: Hydrogeologic Characteristics, Last Paragraph. This paragraph does discuss the time frame of active restoration of the bedrock aquifer, but only in the most general of terms, "exceedingly long time (many decades)" and "extremely lengthy". Again there is no analysis of an active versus passive restoration of the aquifer, which is necessary if the Department is to consider a waiver of its ARAR.

If you have any questions concerning the above comments you can contact me at the above-listed telephone number.

Sincerely,

[redacted]

[redacted]

[redacted]

Telephone: [redacted]
Fax: [redacted]

March 8, 1993

Mr. Cesar Lee
U.S. Environmental Protection Agency
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Re: Novak Sanitary Landfill
[redacted]

Subject: Single Barrier Cap for Old Mine Area

Dear Mr. Lee:

The following comments are offered in response to the February 12, 1993 letter from De Maximus, Inc. concerning the Old Mine and Construction/Demolition Areas of the Novak Sanitary Landfill. In the letter De Maximus states that a single barrier cap should not be placed over the Old Mine Area and Construction/Demolition Area. The following items support the decision of placing a single barrier cap in this area of the landfill.

- The Novak Landfill operated before the implementation of RCRA on November 19, 1980 and served industries in the greater Allentown area. Therefore, the landfill probably received hazardous wastes that were later regulated under RCRA.

- General Electric (G.E.) submitted a Notification of Hazardous Waste Site Form to EPA on June 6, 1981 identifying Novak Landfill as its destination for hazardous waste F006 (Waste water treatment sludges), and F001 (Spent halogenated solvents used in degreasing) (See Attachment No. 1). Additional documentation identifies that G.E. used the Novak Landfill for waste disposal between 1956 and 1960.

- Historical aerial photographs identified the Old Mine Area and Demolition Debris Area as the area of operation from 1958 until 1971.

ATTACHMENT D (Page 1 of 6)

- An EPA Publication on the design and construction of RCRA/CERCLA final covers (EPA/625/425/4-91/025) states that RCRA Subtitle C landfills should be capped with a 20-mil geomembrane liner , in addition to other layers. RCRA Subtitle C requirements are typically used at CERCLA sites because RCRA regulates the same or similar wastes found at many CERCLA sites. Since there is documentation of RCRA hazardous waste (F001 and F006) being disposed at the Novak Landfill from at least one generator (G.E.), the RCRA requirements are applicable.

- It is also important to note that the landfill is located in an area of karst topography. According to today's regulations, a new landfill would not be permitted to be constructed in a karst area because of the unstable hydrogeologic conditions associated with this type of geology.

Due to the fact that the Old Mine Area and Demolition Fill Areas were the oldest portions of the landfill to be operating prior to the implementation of RCRA and there is documentation of hazardous waste disposal in the landfill, and the landfill is situated in a karst area, this area should be closed with a single barrier cap. While it is true that there is not much groundwater degradation in this area, it is also true that monitoring wells may not have been placed in fractures in which contaminated groundwater is migrating. As stated in De Maximus's letter, "it would be difficult to predict, with any accuracy, the extent and location of all fractures containing impacted groundwater..". A single barrier cap should be installed in order to reduce the amount of water infiltrating through the waste and transporting contaminants in the future.

Sincerely,

[redacted]

cc: [redacted]

References

U.S. EPA. 40 Code of Federal Regulations, Parts 260 to 299. Revised as of July 1, 1991.

U.S. EPA Federal Register. 40 CFR Parts 257 and 258 Solid Waste Disposal Facility Criteria; Final Rule. October 9, 1991.

U.S. EPA. Conducting Remedial Investigation/Feasibility Studies for CERCLA Municipal Landfill Sites. EPA/540/P-91/001. February 1991.

U.S. EPA. Requirements for Hazardous Waste Landfill Design, Construction, and Closure. EPA/625/4-89/022. August 1989.

U.S. EPA. Design and Construction of RCRA/CERCLA Final Covers. EPA/625/4-91/025. May 1991.

U.S. EPA Environmental Monitoring Systems Laboratory. Site Analysis for Novak Sanitary Landfill. November 1989.

ATTACHMENT 1

EPA Notification of Hazardous Waste Site

United States Environmental Protection Agency Washington DC

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

810609 PAD003001732

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: General Electric Co.
Street: 1801 South 12th St.
City: Allentown State: PA Zip Code: 18103

B Site Location:
Enter the common name (if known) and actual location of the site.

Name of Site: Novak Landfill
Street: RD1 Parklin terrace Rd
City: Orefield County: Lehigh State: PA Zip Code:

PAD 079160842

C Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Gladu, Robert Env. Engr.
Phone: 215-797-6700

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): 1956 To (Year): 1960

E. Waste Type: Choose the option you prefer to complete

Option I: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☒ Organics
2. ☒ Inorganics
3. ☐ Solvents
4. ☐ Pesticides
5. ☒ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☒ Mixed Municipal Waste
10. ☐ Unknown
11. ☐ Other (Specify)

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☒ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary, Refuse
15. ☐ Photofinish
16. ☐ Lab, Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

F006		
F001		

JUN 9 1981 RCRA EPA III

Attachment III

205186

Identification of Hazardous Waste Site — Side Two

ORIGINAL (Red)

Waste Quantity

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☐ Landfill
4. ☐ Tanks
5. ☐ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☐ Other (Specify) _____

Total Facility Waste Amount: Not Known

Total Facility Area: Not Known

G Known, Suspected or Likely Releases to the Environment:

Place an X in the appropriate boxes to indicate any known, suspected or likely releases of wastes to the environment. ☐ Known ☐ Suspected ☒ Likely ☐ None

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

N

I Description of Site: (Optional)

Describe the history and present conditions at the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

This is a private landfill site, still in operation for municipal trash, which we used in the late 50's. Some of the hauling was in a company owned and driven truck, mostly hauled by contract hauler...

ATTACHMENT D (Page 6 of 6)

205189

Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in A). For other persons providing information, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify check "Other."

Name: Peter M. Lubin, Plant Manager

Street: 1801 South 12th Street

City: Allentown State: PA Zip Code: 18105

Signature: Peter M. Lubin Date: 6/9/81

☐ Owner, Present
☐ Owner, Past
☐ Transporter
☐ Operator, Present
☐ Operator, Past
☒ Other

AR308271C

[redacted]

SUBJECT: Novak Sanitary Landfill
Groundwater Recovery Feasibility

DATE: 3-9-93

FROM: [redacted]

TO: Cesar Lee, RPM
SE PA Section (3HW21)

As requested, I have reviewed the memorandum regarding the feasibility of a groundwater recovery system at the Novak Sanitary Landfill prepared by Vincent Uhl Associates, Inc. dated February 11, 1993. This memorandum was prepared by a PRP consultant after learning that EPA was considering including a groundwater pump and treat alternative in the Proposed Plan. Based upon an evaluation of this memorandum and the information contained in the RI/FS Report, recommendations regarding groundwater remedial alternatives are then provided.

Breifly, the memorandum summarized the extent of groundwater contamination and groundwater flow conditions at the site but presented little new information regarding the practicability of groundwater recovery operations. Using specific capacity data gathered from short term pumping tests in a number of monitoring wells, 58 pumping wells were deemed necessary to effectively remediate the aquifer. This prediction, however, was based upon drawdown data gathered during well development procedures only using data from the pumping well instead of properly performed long-term aquifer tests using observation wells. This information is therefore of limited use.

Properly designed pumping tests and subsequent capture zone analysis would be needed to accurately determine the number of wells necessary to achieve aquifer restoration. This data is commonly gathered during pre-design field investigations after a remedy has already been selected.

Although the fractured nature of the bedrock aquifer and low levels of groundwater contamination may make aquifer restoration very difficult or even unattainable, there is insufficient data contained in the RI/FS Report to make an objective evaluation of a technical impracticability waiver. Ideally, the RI/FS Report would have specifically addressed whether pump and treat could contain, capture, or completely remove the groundwater contaminants, possibly employing groundwater modeling to estimate restoration time-frames.

In the absence of such information, an interim groundwater remedial action limited in scope to addressing source control/contaminant mass removal in the vicinity of the groundwater mound should be considered. This would permit the collection of a data base sufficient to determine what the final remediation should be and what ARARs may be met. Alternatively, if implementing the remedy in stages is undesirable, a contingent groundwater remedy providing a detailed and objective level or situation at which a waiver could be triggered could be considered. Both scenerios acknowledge that the practicability of achieving cleanup goals throughout the site cannot be determined until the extraction system has been implemented and plume response monitored over time.

I am not aware of any Superfund guidance or precedent setting circumstance condoning the use of statistics on monitoring well sampling results for the purpose of triggering groundwater remedial actions in cases where the triggers such as ARARS have clearly been exceeded (as is the case at NSL). Although the RCRA program may use statistical analysis to trigger groundwater clean-ups at permitted facilities, it is not clear whether such a scenerio is applicable at Superfund sites. The Toxicologist assigned to the site may be able to provide further insight into this issue.

Please let me know if you would like my assistance in developing an appropriate groundwater strategy for inclusion in the Proposed Plan or if you would like to discuss any of these issues in greater detail.

cc: [redacted]